

The rejection is believed to be fairly summarized as asserting that:

- 1) Becker shows photochromic chromene derivatives of the type claimed (citing column 5, lines 55ff and Claim 1);
- 2) The claimed invention of Applicant differs from the invention of Becker in that Becker does not specifically teach a 1,4-benzodioxine group;
- 3) Kumar, however, teaches an analogous photochromic chromene compound that includes fused ring polycyclic O-heterocyclic substituents (citing column 2, lines 25-65, and particularly ring a of formula I);
- 4) It is therefore asserted that to:  
“...modify Becker...to include the teachings of Kumar...would have been obvious to one of ordinary skill in the art, as the results, enhanced photochromic properties, would not have been unexpected.” (Page 2, lines 18-20).

This rejection is respectfully traversed.

#### RESPONSE TO THE REJECTION

The rejection is traversed because the references do not actually teach what they are asserted to teach in formulating the rejection and the combination of the references fails to teach the invention as claimed.

It is first an oversimplification of the issues to assert that Becker shows photochromic chromene compounds “of the type claimed.” Although Becker does show a basic naphtha[1,2-b]pyran photochromic compound. However, there are no substituents described with respect to their effects on photochromic properties on the compound. Most specifically, there is no disclosure of a benzodioxine group.

Secondly, although Kumar is cited to show a 1,4-benzodioxine group, there is no disclosure of such a group. This is in effect apparently recognized by the PTO as the rejection merely cites Kumar as showing

“...an analogous photochromic chromene compound that includes fused ring polycyclic O-heterocyclic substituents...”

There is therefore not even an assertion in the rejection that the reference specifically shows the specific group required by the claims. On this basis alone, as neither reference shows the specific group, the 1,4-benzodioxine group, recited in the claims, the rejection

must fail. There must be some basis for motivating one skilled in the art to the specific compound recited in the claims, and not merely a general invitation to investigate in the technical field without specific direction. The mere fact that the PTO can make an attempt to assert that in its opinion it was obvious to try making modifications in the chemical structures of Becker and Kumar, without any specific intended direction or motivation has been consistently held to be an insufficient showing to sustain obviousness under 35 USC 103(a) (see, for example, *Pfizer, Inc. v. International Rectifier Corp. et al.*, (US DC 1980) 207 USPQ 397).

The minimum standard for obviousness is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the specific combinations recited in the claims (see, for example, *Fromson v. Advance Offset Plate, Inc.* (Fed. Cir 1985) 225 USPQ 22.

Even the earliest cases on this topic set a standard that has not been met, as in the seminal case *In re Stemniski*, (CCPA 1971) 444 F. 2d 581 at 586, 170 USPQ 343 at 347:

"How can there be obviousness of structure, or particularly the subject matter as a whole, when no apparent purpose is to be achieved, no reason or motivation to be satisfied, upon modifying the reference compounds' structure."

The rejection has failed to establish even a *prima facie* basis for asserting obviousness. There is no motivation for making the proposed changes, which are especially changes from one structure to another, where the second structure (the 1,4-benzodioxine) is not even specifically described in the Kumar or Becker reference.

It is further to be noted that even if one skilled in the art fused the adjacent groups shown in Becker's claims to form a benzodioxino group (which is not suggested by any art of record in the rejection), those compounds would form dibenzodioxino-pyran moieties, not naphtha[1,2-b]pyrans groups. Following the directions imposed on the references, even without sufficient teaching, the result would not meet the limitations of the claims.

Additionally, there is further independently patentable subject matter recited in the limitations of claims 3 and 4, with an indeno group on the pyran side of the naphthalene moiety. This is not obvious from the two references in the rejection.

Still further evidence rebutting any presumption or inference of obviousness is the fact that the properties of the resulting compounds have unexpected qualities compared to

those of the prior art, especially Kumar. As evidenced in the data of Table 1, the compounds of the invention show two important peaks within the visible region of the electromagnetic spectrum to provide the appropriate color absorbance. Kumar does not show the twin peaks in the ranges displayed by the compounds of the invention in Table 1. As the properties of the compounds are not obvious, the compounds cannot be obvious under 35 USC 103(a).

The rejection is clearly in error and must be withdrawn.

### CONCLUSION

Applicants assume the application is now in proper order and in condition for allowance. Please direct any inquiries to the undersigned attorney at (952) 832-9090.

Respectfully submitted,

XUZHI QIN

By his Representatives,

MARK A. LITMAN & ASSOCIATES, P.A.  
York Business Center, Suite 205  
3209 West 76<sup>th</sup> Street  
Edina, Minnesota 55435  
(952) 832-9090

Date: January 7, 2003

By: Mark A. Litman

Mark A. Litman Reg. No. 26,390

CERTIFICATE UNDER 37 C.F.R. 1.8: The undersigned hereby certifies that this Letter is being deposited in the United States Postal Service, as first class mail, with sufficient postage, in an envelope addressed to: BOX Amendment, Assistant Commissioner for Patents, Washington, D.C. 20231 on January 7, 2003.

Mark A. Litman  
Name

Mark A. Litman  
Signature